FALCON ESS

SIGNATURE GREY SERIES

CLEAN ENERGY
A BRIGHTER TOMORROW

DATASHEET

# H3 Smart

## THREE-PHASE HYBRID INVERTER

Harness the power of the sun day and night with the Falcon ESS H3 Smart. A high-performance three-phase hybrid inverter designed for modern homes and businesses, compatible with our advanced battery systems.




**5kW »»» 15kW**

### HIGH EFFICIENCY

Maximize your solar yield with advanced three-phase hybrid technology.

### EASY INSTALLATION

Flexible configuration, plug and play set-up, built-in protection and user-friendly design.

### IP65 RATED

Engineered to last with maximum durability. Suitable for outdoor installation.



Advanced System Monitoring
with **FalconCloud 2.0**

### REMOTE MONITORING

Monitor your system remotely via FalconCloud 2.0 app or web portal. A smart assistant to help you understand and manage your energy system.

www.falcon-ess.com

POWERING A CLEANER TOMORROW

# TECHNICAL SPECIFICATIONS

| MODEL | H3-5.0-Smart | H3-6.0-Smart | H3-8.0-Smart | H3-9.9-Smart | H3-10.0-Smart | H3-12.0-Smart | H3-15.0-Smart |
|---|---|---|---|---|---|---|---|
| **PV INPUT** | | | | | | | |
| Max. Array Power [Wp] | 11000 | 14000 | 18000 | 20000 | 20000 | 24000 | 30000 |
| Max. DC Input Power [W] | 11000 | 13200 | 17600 | 18000 | 18000 | 22500 | 22500 |
| Max. DC Voltage [V] | 1000[1] | | | | | | |
| Nominal DC Operating Voltage [V] | 620 | | | | | | |
| Max. MPPT Input Current [A] | 20/20/20 | | | | | | |
| Max. MPPT Short Circuit Current [A] | 25/25/25 | | | | | | |
| Max. MPPT Input Power [W] | 10000/10000/10000 | | | | | | |
| Min. Operating PV Voltage [V] | 90[2] | | | | | | |
| MPPT Voltage Range [V] | 120 ~ 950 | | | | | | |
| Start-up Input Voltage [V] | 140 | | | | | | |
| No. of MPP Trackers | 3 | | | | | | |
| Strings per MPP Tracker | 1+1+1 | | | | | | |
| **BATTERY** | | | | | | | |
| Battery Type | Lithium-Ion battery (LFP) | | | | | | |
| Battery Voltage [V] | 100 ~ 800 | | | | | | |
| Min. Operating Battery Voltage [V] | 100 | | | | | | |
| Min. Battery Voltage @Full AC Load [V] | 108 | 125 | 160 | 210 | 210 | 250 | 310 |
| Max. Charge/ Discharge Current [A] | 50.0 | | | | | | |
| Communication Interface | CAN | | | | | | |
| **AC OUTPUT** | | | | | | | |
| Nominal AC Power [W] | 5000 | 6000 | 8000 | 9900 | 10000 | 12000 | 15000 |
| Max. Apparent AC Power [VA] | 5500 | 6600 | 8800 | 9900 | 11000[3] | 13200 | 16500 |
| Rated Grid Voltage (AC Voltage Range) [V] | 400/230; 380/220, 3L/N/PE | | | | | | |
| Rated Grid Frequency [Hz] | 50/60, ±5 | | | | | | |
| Rated AC Current [A] (Per Phase)[4] | 7.6 | 9.1 | 12.1 | 15.0 | 15.2 | 18.2 | 22.7 |
| Max. AC Current [A] (Per Phase)[4] | 8.3 | 10.0 | 13.3 | 15.0 | 16.7 | 20.0 | 25.0 |
| Power Factor | 1(Adjustable from 0.8 leading to 0.8 lagging) | | | | | | |
| THDI [%] | <3 @rated power | | | | | | |
| **AC INPUT** | | | | | | | |
| Max. AC Power [VA] | 6000 | 7200 | 9600 | 12000 | 12000 | 14400 | 16000 |
| Rated Grid Voltage (AC Voltage Range) [V] | 400/230; 380/220, 3L/N/PE | | | | | | |
| Rated Grid Frequency [Hz] | 50/60, ±5 | | | | | | |
| Max. AC Current [A] (Per Phase) | 9.1 | 10.9 | 14.5 | 18.2 | 18.2 | 21.8 | 24.2 |
| **EPS OUTPUT** | | | | | | | |
| Max. Apparent AC Power [VA] | 5000 | 6000 | 8000 | 10000 | 10000 | 12000 | 15000 |
| Peak Apparent AC Power [VA] (60s) | 6000 | 7200 | 9600 | 12000 | 12000 | 14400 | 15000 |
| Rated Output Voltage [V] | 400/230; 380/220, 3L/N/PE | | | | | | |
| Rated Grid Frequency [Hz] | 50/60 | | | | | | |
| EPS Max. Current [A] (Per Phase) | 7.2 | 8.7 | 11.6 | 14.5 | 14.5 | 17.4 | 21.7 |
| Power Factor | 1(Adjustable from 0.8 leading to 0.8 lagging) | | | | | | |
| Switch Time [ms] | <10 | | | | | | |
| THDV [%] | <3 @Linear load | | | | | | |
| **EFFICIENCY** | | | | | | | |
| MPPT Efficiency [%] | 99.90 | | | | | | |
| Max. Efficiency [%] | 97.30 | 97.70 | 97.70 | 97.90 | 97.90 | 97.90 | 97.90 |
| European Efficiency [%] | 97.20 | | | | | | |
| **PROTECTION** | | | | | | | |
| PV Reverse Polarity Protection | YES | | | | | | |
| Battery Reverse Protection | YES | | | | | | |
| Anti-Islanding Protection | YES | | | | | | |
| Output Short Protection | YES | | | | | | |
| Leakage Current Protection | YES | | | | | | |
| Insulation Resistor Detection | YES | | | | | | |
| Overvoltage Category | III(AC side), II(DC side) | | | | | | |
| Reverse Connect Protection | YES | | | | | | |
| Overcurrent Protection / Overtemperature Protection | YES | | | | | | |
| DC/AC Surge Protection | Type II(PV)/Type II(AC) | | | | | | |
| AFCI Protection | Optional | | | | | | |
| DC Switch | YES | | | | | | |
| **GENERAL DATA** | | | | | | | |
| Dimensions (W*H*D) [mm] | 600*450*226 | | | | | | |
| Dimension of Packing (W*H*D) [mm] | 665*545*390 | | | | | | |
| Net Weight [kg] | 34 | | | | | | |
| Gross Weight [kg] | 40 | | | | | | |
| Installation | Wall-mounted | | | | | | |
| Operating Temperature Range [°C] | -25 ~ +60 (Derating at 45) | | | | | | |
| Storage Temperature [°C] | -40 ~ +70 | | | | | | |
| Storage/Operation Relative Humidity [%] | 0 ~ 100 | | | | | | |
| Altitude [m] | <4000 @Derating exceeding 2000 | | | | | | |
| Protective Class | I | | | | | | |
| Ingress Protection | IP65 (For outdoor use) | | | | | | |
| Standby Consumption [W] | 20 ~ 25 | | | | | | |
| standby Mode | YES | | | | | | |
| Cooling | Natural | Natural | Natural | Natural | Natural | FAN cooling | FAN cooling |
| Noise Grade [dB] | <40 | <40 | <40 | <40 | <40 | <55 | <55 |
| Inverter Topology | Non-isolated | | | | | | |
| Communication Interface | Ethernet, EMS(RS485), Meter, WiLAN(Wifi+LAN+Bluetooth), 4G(Optional), DRM, Ripple Control, USB, BMS(CAN), SG Ready | | | | | | |
| Button | Capacitive touch sensor *4 | | | | | | |
| Buzzer | 1, inside(EPS&Earth fault) | | | | | | |

[1] For 1000V system, PV Maximum operating voltage is 950V.

[2] The starting working voltage of the power supply is 90V.

[3] Belgian safety regulations require an apparent power of 10000W to be 10000VA.

[4] Per-phase output current can be increased via remote settings. After enabling the expansion function, the inverter can deliver up to 22.7A output current per phase.